

Remarks

Claims 1 through 18 and 21 and 22 are now pending.

Claim 1 has been amended to more specifically point out that the intercalation and exfoliation of the clay is conducted in situ within the elastomer host. Adequate basis is found, for example, in the paragraph in the Applicant's specification on Page 4, Lines 5 through 12.

New claims 21 and 22 have been added which relate to an addition of a coupling agent. Adequate basis is found in the Applicant's specification on Page 7, Lines 28 through 33.

The Rejection

The following US patents have been relied upon to reject the Applicant's claims

5,936,023	Kato
6,034,164	Elpass

Claims 1 through 7 and 9 through 13 have been rejected under 35 U.S.C. Section 102(b) as being anticipated by Kato.

Claims 8 and 14-20 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Kato in view of Elpass.

The above rejections of the Applicant's claims is traversed and a reconsideration requested in view of the amendments made to the claims and the following comments.

The Invention

It is important to appreciate that a significant aspect of the Applicant's claimed invention is an intercalation and exfoliation of a clay in situ within an elastomer host. This is considered herein to be a particular departure from past practice which is pointed out in the Applicant's specification on Page 2, Lines 20 through 33; Page 6, Lines 21 through 23; Page 7, Lines 5 through 18 and Page 8, Lines 21 through 30.

Rejection of Process Claims 1 through 7 and 9 and Composition and Article claims 10 through 13 Under 35 U.S.C. Section 102(b)

The cited Kato reference relates to a relatively classic procedure of intercalating and exfoliating a clay such as a smectite clay in which the clay is swelled and intercalated in a aqueous

medium with a quaternary ammonium salt (an ionium ion) following which it is then recovered and mixed with an elastomer composition, with a difference apparently involving pre-mixing the clay with a processing oil.

It is respectively contended that the Kato reference leads one away from both the process and the product of the Applicant's claimed invention in which the Applicant's claimed process requires the intercalation and exfoliation of the clay required to occur in situ within the elastomer host rather than to be pre-intercalated and exfoliated prior to mixing with the elastomer composition. Indeed it is contended that the Applicant's process and product claims (which depend upon the process claims) would have to be significantly and materially reconstructed in a manner not taught or suggested by Kato with an undue amount of experimentation with the result of the reconstructed process and reconstructed product being uncertain.

Accordingly, it is contended that the invention of the Applicants' respective claims 1 through 7 and 9 through 13 is not anticipated by the Kato patent reference.

Rejection of Process Claim 8 and Tire Claims 14 through 20 under 35 U.S.C. Section 103(a)

The Kato patent reference is materially deficient for a purpose of anticipating the invention of the Applicants' claims as hereinbefore pointed out and, on the same basis, is similarly contended to be materially deficient for rejecting the respective Applicant's claims as being obvious under 35 U.S.C. Section 103(a). As before, it is contended that the Kato reference both teaches away from and does not teach or suggest the invention of the Applicant's claims.

The Elpass patent reference is also contended to be materially deficient for rejecting the Applicant's claimed invention as being obvious and, moreover, does not correct the aforesaid deficiency of the Kato reference.

Inspection of the Elpass reference reveals that it relates to mixing a modified layered silicate (e.g. clay) which has been first pre-modified with a swelling agent prior to its addition to a combination of a first melt processible polymer (e.g. natural rubber, styrene-butadiene polymers) and a second polymer (similar to the first polymer but of a lower molecular weight). As with Kato,

it is contended that Elpass leads one away from both the process claim 8 and tire claims 14 through 20 of the Applicant's claimed invention which require the clay to be intercalated and exfoliated in situ within the elastomer host instead of being intercalated and exfoliated prior to mixing with the elastomer composition and the use of such resultant rubber composition in at least one component of a tire.

Accordingly, it is contended that the combination of the Kato and Elpass references does not make out a prima facie case of obviousness of the Applicant's claimed invention under the requirements of 35 U.S.C. Section 103(a).

Indeed, an application of the combination of Kato and Elpass references would require a significant and substantial reconstruction of the Applicant's process and tire claims combined with an undue amount of experimentation with the result being uncertain.

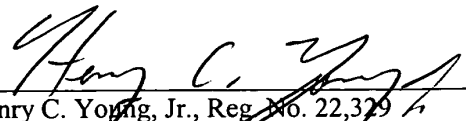
Applicant's New Claims 21 and 22.

The Applicant's new claims are directed to selectively mixing a coupling agent with the rubber composition. Significantly, neither the Kato or Elpass reference teaches, suggests or contemplates an inclusion of the coupling agent as recited in the Applicant's new claims 21 and 22.

Conclusion

It is contended that the Applicant's claims are not anticipated by (under 35 U.S.C. Section 102(e)), are not obvious in view of (under 35 U.S.C. Section 103(a)), and are therefore patentably distinct from the cited references whether applied singularly or in combination.

Respectfully submitted,


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